

EXPERIMENTAL EYE RESEARCH

Editors-in-Chief

E. A. BALAZS and K. E. EAKINS

Section Editors

A. Bill, L. Z. Bito, H. Bloemendal, J. G. Hollyfield, P. J. O'Brien, J. Piatigorsky
and A. Spector

Editors

D. C. Beebe	H. J. Hoenders
J. C. Besharse	J. Horwitz
F. Bettelheim	S. Iwata
P. Bhattacharjee	B. Jacobson
J. E. Brown	M. E. Langham
A. I. Cohen	R. E. Marc
Y. Courtois	D. M. Maurice
H. Davson	R. Meyers-Elliott
G. Duncan	V. N. Reddy
B. E. J. Ehinger	H. Ripps
D. B. Farber	J. W. Rohen
W. Garner	J. C. Saari
M. O. Hall	R. Tripathi
J. Harding	J. A. Zadunaisky

VOLUME 44

1987



ACADEMIC PRESS

London Orlando San Diego New York
Austin Boston Sydney Tokyo Toronto
Harcourt Brace Jovanovich, Publishers

Copyright © 1987 by Academic Press Inc. (London) Ltd.

ALL RIGHTS RESERVED

No part of this volume may be produced in any form, by photostat, microfilm, or any other means, without written permission from the publishers.

Printed in Great Britain



CONTENTS OF VOLUME 44

NUMBER 1, JANUARY 1987

ISHIZAKI, H., HALEY, J. E., GOURAS, P., LIANG, J. T. and KJELDBYE, H. M. Isolation and Characterization of Plasma Membrane Proteins of Cultured Human Retinal Pigment Epithelium	1
STRAMM, L. E., LI, W., AGUIRRE, G. D. and ROCKEY, J. H. Glycosaminoglycan Synthesis and Secretion by Bovine Retinal Capillary Pericytes in Culture	17
LI, W., HU, T. S., STRAMM, L. E., ROCKEY, J. H. and LIU, S. L. Synergistic Activation of Retinal Capillary Pericyte Proliferation in Culture by Inositol Triphosphate and Diacylglycerol	29
ERICKSON, P. A., FISHER, S. K., GUERIN, C. J., ANDERSON, D. H. and KASKA, D. D. Glial Fibrillary Acidic Protein Increases in Müller Cells after Retinal Detachment	37
YABLONSKI, M. E., NOVACK, G. D., BURKE, P. J., COOK, D. J. and HARMON, G. The Effect of Levobunolol on Aqueous Humor Dynamics	49
GEANON, J. D., TRIPATHI, B. J., TRIPATHI, R. C. and BARLOW, G. H. Tissue Plasminogen Activator in Avascular Tissues of the Eye: a Quantitative Study of its Activity in the Cornea, Lens, and Aqueous and Vitreous Humors of Dog, Calf, and Monkey	55
GOLDMAN, S. S. and WITKOVSKY, P. Evidence for Gluconeogenesis in the Amphibian Retina	65
ARABIE, M. and MAURICE, D. The Rate of Diffusion of Fluorophores through the Corneal Epithelium and Stroma	73
HAZLETT, L. D. and MOON, M. M. Ocular Surface Complex Carbohydrates are Modified with Aging	89
SCOTT, B. L., REDDY, T. S. and BAZAN, N. G. Docosahexaenoate Metabolism and Fatty-acid Composition in Developing Retinas of Normal and <i>rd</i> Mutant Mice	101
NAVON, S. E., LEE, R. H., LOLLEY, R. N. and FUNG, B. K.-K. Immunochemical Determination of Transducin Content in Retinas Exhibiting Inherited Degeneration	115
LENTRICCHIA, B. B., ITOH, Y., PLANTNER, J. J. and KEAN, E. L. The Influence of Carbohydrates on the Binding of Rod Outer-segment (ROS) Disc Membranes and Intact ROS by the Cells of the Retinal Pigment Epithelium of the Embryonic Chick	127
LETTERS TO THE EDITORS	
BASSNETT, S., CROGHAN, P. C. and DUNCAN, G. Diffusion of Lactate and its Role in Determining Intracellular pH in the Lens of the Eye	143
SHOUKREY, N. M. and TABBARA, K. F. An Adenosine Diphosphate Phosphohydrolase in Limbal Vasculature	149
ANDERSON, R. E., MAUDE, M. B., LEWIS, R. A., NEWSOME, D. A. and FISHMAN, G. A. Abnormal Plasma Levels of Polyunsaturated Fatty Acid in Autosomal Dominant Retinitis Pigmentosa	155
DUVAL, G., GRUBB, B. R. and Bentley, P. J. Mercury Accumulation in the Eye following Administration of Methylmercury	161

NUMBER 2, FEBRUARY 1987

KANAYAMA, T., MIYANAGA, Y., HORIUCHI, K. and FUJIMOTO, D. Detection of the Cross-linking Amino Acid, Histidinoalanine, in Human Brown Cataractous Lens Protein	165
HAMANAKA, T. and BILL, A. Morphological and Functional Effects of Na ₂ EDTA on the Outflow Routes for Aqueous Humor in Monkeys	171
WILLIAMS, R. N. and PATERSON, C. A. The Influence of Topical Corticosteroid Therapy upon Polymorphonuclear Leukocyte Distribution, Vascular Integrity and Ascorbate Levels in Endotoxin-induced Inflammation of the Rabbit Eye	191

BANGA, J. P., KASP, E., SULEYMAN, S., BROWN, E., ELLIS, B. A., SANDERS, M. D. and DUMONDE, D. C. Comparative Biochemical Analysis of Purified S-Antigen from Human, Bovine, Porcine and Rat Retina	199
PLEHWE, W. E., CHAHAL, P. S., FALLON, T. J., CUNNINGHAM, J. R., NEAL, M. J. and KOHNER, E. M. Role of Fluorescein Glucuronide and its Metabolism in Vitreous Fluorophotometry	209
BITO, L. Z. and BAROODY, R. A. The Ocular Pharmacokinetics of Eicosanoids and their Derivatives. I. Comparison of Ocular Eicosanoid Penetration and Distribution Following the Topical Application of PGF _{2α} , PGF _{2α} -1-methyl ester, and PGF _{2α} -1-isopropyl ester	217
SIEGEL, M. J., LEE, P.-Y., PODOS, S. M. and MITTAG, T. W. Effect of Topical Pergolide on Aqueous Dynamics in Normal and Glaucomatous Monkeys	227
GUNNARSON, G., JAKOBSSON, A.-K., HAMBERGER, A. and SJÖSTRAND, J. Free Amino Acids in the Pre-retinal Vitreous Space. Effect of High Potassium and Nipecotie Acid	235
CALDWELL, R. B., SLAPNICK, S. M. and McLAUGHLIN, B. J. Quantitative Freeze-Fracture and Filipin-binding Study of Retinal Pigment Epithelial-cell Basal Membranes in Diabetic Rats	245
KEETING, P. E., DONG, D., FU, S.-C. J. and LYSZ, T. W. Rat Lens Prostaglandin Generation Proceeds by the Non-enzymatic Degradation of PGH ₂ Endoperoxide	261
PERRY, R. E., SWAMY, M. S. and ABRAHAM, E. C. Progressive Changes in Lens Crystallin Glycation and High-molecular-weight Aggregate Formation Leading to Cataract Development in Streptozotocin-diabetic Rats	269
KAUFMAN, P. L. Non-additivity of Maximal Pilocarpine and Cytochalasin Effects on Outflow Facility	283
TRIPATHI, R. C., TRIPATHI, B. J. and SPAETH, G. L. Localization of Sialic Acid Moieties in the Endothelial Lining of Schlemm's Canal in Normal and Glaucomatous Eyes	293
KORETZ, J. F., NEIDER, M. W., KAUFMAN, P. L., BERTASSO, A. M., DEROUSSEAU, C. J. and BITO, L. Z. Slit-lamp Studies of the Rhesus Monkey Eye. I. Survey of the Anterior Segment	307
WOODWARD, D. F., DOWLING, M. C., FELDMANN, B. J. and CHEN, J. Topical Timolol, at Conventional, Unilateral Doses Causes Bilateral Ocular β -blockade in Rabbits	319

NUMBER 3, MARCH 1987

LAKE, N. and MALIK, N. Retinal Morphology in Rats Treated with a Taurine Transport Antagonist	331
JANSEN, H. G., SANYAL, S., DE GRIP, W. J. and SCHALKEN, J. J. Development and Degeneration of Retina in <i>rds</i> Mutant Mice: Ultraimmunohistochemical Localization of Opsin	347
HUTCHINS, J. B. and HOLLYFIELD, J. G. Cholinergic Neurons in the Human Retina	363
COLLEY, N. J., CLARK, V. M. and HALL, M. O. Surface Modification of Retinal Pigment Epithelial Cells: Effects on Phagocytosis and Glycoprotein Composition	377
VAUGHAN, D. K. and FISHER, S. K. The Distribution of F-actin in Cells Isolated from Vertebrate Retinas	393
EVANS, J. A. and BATTELLE, B.-A. Histogenesis of Dopamine-containing Neurons in the Rat Retina	407
KAUFMAN, P. L. Adenosine 3',5'-cyclic-monophosphate and Outlaw Facility in Monkey Eyes with Intact and Retrodisplaced Ciliary Muscle	415
EISENFELD, A. J., BUNT-MILAM, A. H. and SAARI, J. C. Uveoretinitis in Rabbits Following Immunization with Interphotoreceptor Retinoid-binding Protein	425
McLAUGHLIN, B. J. and BOYKINS, L. G. Examination of Sialic Acid Binding on Dystrophic and Normal Retinal Epithelium	439
WAKAKURA, M. and YAMAMOTO, N. Immunohistological Localization of Calmodulin in Feline Rod Outer Segments	451

RICCI, B. Effects of Hyperbaric, Normobaric and Hypobaric Oxygen Supplementation on Retinal Vessels in Newborn Rats: a Preliminary Study	459
LETTERS TO THE EDITORS	
LAVAL, M. M., PAPERMASTER, D. S., BRIDGES, C. D. B., RAPP, L. M., GONZALEZ-FERNANDEZ, F. and HOLLYFIELD, J. G. Absence of an Inherited Retinal Degeneration in the WAG/Rij Rat	465
ANNOUNCEMENT	470

NUMBER 4, APRIL 1987

FRIEDMAN, Z., HACKETT, S. F. and CAMPOCHIARO, F. A. Characterization of Adenylate Cyclase in Human Retinal Pigment Epithelial Cells In Vitro	471
OLSEN, T. and SPERLING, S. The Swelling Pressure of the Human Corneal Stroma as Determined by a New Method	481
ACLAND, G. M. and AGUIRRE, G. D. Retinal Degeneration in the Dog: IV. Early Retinal Degeneration (<i>erd</i>) in Norwegian Elkhounds	491
SATTAYASAI, J. and EHRLICH, D. Folic Acid Protects Chick Retinal Neurons Against the Neurotoxic Action of Excitatory Amino Acids	523
BUNT-MILAM, A. H., DENNIS, M. B., JR and BENSINGER, R. E. Optic Nerve Head Axonal Transport in Rabbits with Hereditary Glaucoma	537
JOHNSON, L. V. and HAGEMAN, G. S. Enzymatic Characterization of Peanut Agglutinin-binding Components in the Retinal Interphoton-receptor Matrix	553
MC EWAN, J. R. and FARNSWORTH, P. N. Regional Resistivity Variations in Lens Homogenates	567
HSU, M.-Y., JASKOLL, T. F., UNAKAR, N. J. and BEKHOR, I. Survival of Fiber Cells and Fiber-cell Messenger RNA in Lens of Rats Maintained on a 50 % Galactose Diet for 45 Days	577
GENTLEMAN, S., REID, T. W. and MARTENSEN, R. M. Vanadate Stimulation of Phosphotyrosine Protein Levels in Quiescent Nakano Mouse Lens Cells	587
LETTERS TO THE EDITORS	
ÅKESSON, B., BENGTSOON, B. and STEEN, B. Are Lens Opacities Related to Plasma Selenium and Glutathione Peroxidase in Man?	595
ANNOUNCEMENTS	597

NUMBER 5, MAY 1987

OBITUARY: Giuseppina D'Elia Raviola	599
DELAYE, M., DANFORD-KAPLAN, M. E., CLARK, J. I., KROP, B., GULIK-KRZYWICKI, T. and TARDIEU, A. Effect of Calcium on the Calf Lens Cytoplasm	601
WHEELER, T. G. Goldfish Spectral Sensitivity Increase and Shift with Decreasing Temperature	617
KAPLAN, M. W., IWATA, R. T. and SEARS, R. C. Lengths of Immunolabelled Ciliary Microtubules in Frog Photoreceptor Outer Segments	623
VARNER, H. H., RAYBORN, M. E., OSTERFELD, A. M. and HOLLYFIELD, J. G. Localization of Proteoglycan within the Extracellular Matrix Sheath of Cone Photoreceptors	633
SEMPLE-ROWLAND, S. L. and DAWSON, W. W. Cyclic Light Intensity Threshold for Retinal Damage in Albino Rats Raised Under 6 Lx	643
HOE, S. T. and CRABBE, M. J. C. Kinetics Effects of Metal Ion Chelating Reagents and their Analogues on Bovine Lens Aldehyde Dehydrogenase	663
CENEDELLA, R. J. Direct Chemical Measurement of DNA Synthesis and Net Rates of Differentiation of Rat Lens Epithelial Cells In Vivo: Applied to the Selenium Cataract	677
BESSEMS, G. J. H., RENNEN, H. J. J. M. and HOENDERS, H. J. Lanthionine, a Protein Cross-link in Cataractous Human Lenses	691
HIGGINBOTHAM, E. J. and RICHARDSON, T. M. Effects of Vitamin A on Glyco-conjugate: Synthesis in the Trabecular Meshwork. A Preliminary Report	697

YEE, R. W., EDELHAUSER, F. and STERN, M. E. Specular Microscopy of Vertebrate Corneal Endothelium: a Comparative Study	703
ANNOUNCEMENTS	715
NUMBER 6, JUNE 1987	
WILLIAMS, W. F. and ODOM, J. D. The Utilization of ^{13}C and ^{31}P Nuclear Magnetic Resonance Spectroscopy in the Study of the Sorbitol Pathway and Aldose Reductase Inhibition in Intact Rabbit Lenses	717
OSBORNE, N. N. and TOBIN, A. B. Serotonin-accumulating Cells in the Iris-ciliary Body and Cornea of Various Species	731
GORTHY, W. C. and AZARI, P. Biochemical and Histochemical Evidence for Lysosomal Proteases in Rodent Lenses	747
SUZUKI, J.-I., NAKAGAWA, T., OGAWA, K. and MORI, M. The Effect of Colchicine on the Diurnal Variation of Phagocytosis in Mouse Retinal Pigment Epithelium	755
PENN, J. S. and ANDERSON, R. E. Effect of Light History on Rod Outer-segment Membrane Composition in the Rat	767
PENN, J. S., NAASH, M. E. and ANDERSON, R. E. Effect of Light History on Retinal Antioxidants and Light Damage Susceptibility in the Rat	779
IRONS, M. J. Cytochemical Localization of Mn^{2+} -dependent Pyrimidine 5'-nucleotidase Activity in Isolated Rod Outer Segments	789
MUGGLETON-HARRIS, A. L. and HIGBEE, N. An In Vivo and In Vitro Study of the Embryonic and Adult Lop Mutant Congenital Cataractous Lens	805
BESSEMS, G. J. H. and HOENDERS, H. J. Distribution of Aromatic and Fluorescent Compounds Within Single Human Lenses	817
BITO, L. Z., BAROODY, R. A. and MIRANDA, O. C. Eicosanoids as New Class of Ocular Hypotensive Agents. 1. The Apparent Therapeutic Advantages of Derived Prostaglandins of the A and B Type as Compared with Primary Prostaglandins of the E, F and D Type	825
MARSHAK, D. W., CARRAWAY, R. E. and FERRIS, C. F. Characterization of Immuno-reactive Substance P and Neurotensin in the Goldfish Retina	839
AKHTAR, R. A. Effects of Norepinephrine and 5-Hydroxytryptamine on Phosphoinositide- PO_4 Turnover in Rabbit Cornea	849
UENO, N., SEBAG, J., HIROKAWA, H. and CHAKRABARTI, B. Effects of Visible-light Irradiation on Vitreous Structure in the Presence of a Photosensitizer	863
JERNIGAN, H. M., JR and ZIGLER, J. S., JR, Metabolism of Glutamine and Glutamate in Monkey Lens	871
LAVAILE, M. M. and GORRIN, G. M. Protection from Light Damage by Ocular Pigmentation: Analysis Using Experimental Chimeras and Translocation Mice	877
YUE, B. Y. J. T., ELNER, V. M., ELNER, S. G. and DAVIS, H. R. Lysosomal Enzyme Activities in Cultured Trabecular-Meshwork Cells	891
BROWN, N. A. P. and BRON, A. J. An Estimate of the Human Lens Epithelial Cell Size In Vivo	899
KUWAYAMA, Y., GRIMES, P. A., PONTE, B. and STONE, R. A. Autonomic Neurons Supplying the Rat Eye and the Intraorbital Distribution of Vasoactive Intestinal Polypeptide (VIP)-like Immunoreactivity	907
POLITI, L. E., ADLER, R. and WHITUM-HUDSON, J. A. Differential Sensitivity of Cultured Retinal Neurons and Photoreceptors to Herpes Simplex Infection	923
KATZ, M. L., DREA, C. M. and ROBINSON, W. G., JR Age-related Alterations in Vitamin A Metabolism in the Rat Retina	939
DIRCKS, C., WILLIAMS, E. H. and CAMPOCHIARO, P. A. High Glucose Concentrations Inhibit Protein Synthesis in Retinal Pigment Epithelium In Vitro	951
ANNOUNCEMENTS	959

AUTHOR INDEX

- ABRAHAM, E. C. (see PERRY, R. E.), 269
- ACLAND, G. M. and AGUIRRE, G. D., Retinal degenerations in the dog: IV. Early retinal degeneration (*erd*) in Norwegian elkhounds, 491
- ADLER, R. (see POLITI, L. E.), 923
- AGUIRRE, G. D. (see ACLAND, G. M.), 491
- AGUIRRE, G. D. (see STRAMM, L. E.), 17
- ÅKESSON, B., BENGTSSON, B. and STEEN, B., Are lens opacities related to plasma selenium and glutathione peroxidase in man?, 595
- AKHTAR, R. A., Effects of norepinephrine and 5-hydroxytryptamine on phosphoinositide- PO_4 turnover in rabbit cornea, 849
- ANDERSON, D. H. (see ERICKSON, P. A.), 37
- ANDERSON, R. E., MAUDE, M. B., LEWIS, R. A., NEWSOME, D. A. and FISHMAN, G. A., Abnormal plasma levels of polyunsaturated fatty acid in autosomal dominant retinitis pigmentosa, 155
- ANDERSON, R. E. (see PENN, J. S.), 767, 779
- ARAI, M. and MAURICE, D., The rate of diffusion of fluorophores through the corneal epithelium and stroma, 73
- AZARI, P. (see GORTHY, W. C.), 747
- BANGA, J. P., KASP, E., SULEYMAN, S., BROWN, E., ELLIS, B. A., SANDERS, M. D. and DUMONDE, D. C., Comparative biochemical analysis of purified S-antigen from human, bovine, porcine and rat retina, 199
- BARLOW, G. H. (see GEANON, J. D.), 55
- BAROODY, R. A. (see BITO, L. Z.), 217, 825
- BASSNETT, S., CROGHAN, P. C. and DUNCAN, G., Diffusion of lactate and its role in determining intracellular pH in the lens of the eye, 143
- BATTELLE, B.-A. (see EVANS, J. A.), 407
- BAZAN, N. G. (see SCOTT, B. L.), 101
- BEKHOR, I. (see HSU, M.-Y.), 577
- BENGTSSON, B. (see ÅKESSON, B.), 595
- BENSINGER, R. E. (see BUNT-MILAM, A. H.), 537
- BENTLEY, P. J. (see DUVAL, G.), 161
- BERTASSO, A. M. (see KORETZ, J. F.), 307
- BESSEMS, G. J. H. and HOENDERS, H. J., Distribution of aromatic and fluorescent compounds within single human lenses, 817
- BESSEMS, G. J. H., RENNEN, H. J. J. M. and HOENDERS, H. J., Lanthionine, a protein cross-link in cataractous human lenses, 691
- BILL, A. (see HAMANAKA, T.), 171
- BITO, L. Z. and BAROODY, R. A., The ocular pharmacokinetics of eicosanoids and their derivatives. 1. Comparison of ocular eicosanoid penetration and distribution following the topical application of $PGF_{2\alpha}$, $PGF_{2\alpha}$ -1-methyl ester, and $PGF_{2\alpha}$ -1-isopropyl ester, 217
- BITO, L. Z., BAROODY, R. A. and MIRANDA, O. C., Eicosanoids as a new class of ocular hypotensive agents. 1. The apparent therapeutic advantages of derived prostaglandins of the E, F and D type, 825
- BITO, L. Z. (see KORETZ, J. F.), 307
- BOYKINS, L. G. (see McLAUGHLIN, B. J.), 439
- BRIDGES, C. D. B. (see LAVAIL, M. M.), 465
- BRON, A. J. (see BROWN, N. A. P.), 899
- BROWN, E. (see BANGA, J. P.), 199
- BROWN, N. A. P. and BRON, A. J., An estimate of the human lens epithelial cell size in vivo, 899
- BUNT-MILAM, A. H., DENNIS, M. B., JR and BENSINGER, R. E., Optic nerve head axonal transport in rabbits with hereditary glaucoma, 537
- BUNT-MILAM, A. H. (see EISENFELD, A. J.), 425
- BURKE, P. J. (see YABLONSKI, M. E.), 49
- CALDWELL, R. B., SLAPNICK, S. M. and McLAUGHLIN, B. J., Quantitative freeze-fracture and filipin-binding study of retinal pigment epithelial-cell basal membranes in diabetic rats, 245
- CAMPOCHIARO, P. A. (see DIRCKS, C.), 951
- CAMPOCHIARO, P. A. (see FRIEDMAN, Z.), 471
- CARRAWAY, R. E. (see MARSHAK, D. W.), 839

- CENEDELLA, R. J., Direct chemical measurement of DNA synthesis and net rates of differentiation of rat lens epithelial cells in vivo: applied to the selenium cataract, 677
- CHAHAL, P. S. (see PLEHWE, W. E.), 209
- CHAKRABARTI, B. (see UENO, N.), 863
- CHEN, J. (see WOODWARD, D. F.), 319
- CLARK, J. I. (see DELAYE, M.), 601
- CLARK, V. M. (see COLLEY, N. J.), 377
- COLLEY, N. J., CLARK, V. M. and HALL, M. O., Surface modification of retinal pigment epithelial cells: effects on phagocytosis and glycoprotein composition, 377
- COOK, D. J. (see YABLONSKI, M. E.), 49
- CRABBE, M. J. C. (see HOE, S. T.), 663
- CROGHAN, P. C. (see BASSNETT, S.), 143
- CUNNINGHAM, J. R. (see PLEHWE, W. E.), 209
- DANFORD-KAPLAN, M. E. (see DELAYE, M.), 601
- DAVIS, H. R. (see YUE, B. Y. J. T.), 891
- DAWSON, W. W. (see SEMPLE-ROWLAND, S. L.), 643
- DE GRIP, W. J. (see JANSEN, H. G.), 347
- DELAVYE, M., DANFORD-KAPLAN, M. E., CLARK, J. I., KROP, B., GULIK-KRZYWICKI, T. and TARDIEU, A., Effect of calcium on the calf lens cytoplasm, 601
- DENNIS, M. B., JR (see BUNT-MILAM, A. H.), 537
- DEROUSSEAU, C. J. (see KORETZ, J. F.), 307
- DIRCKS, C., WILLIAMS, E. H. and CAMPOCHIARO, P. A., High glucose concentrations inhibit protein synthesis in retinal pigment epithelium in vitro, 951
- DONG, D. (see KEETING, P. E.), 261
- DOWLING, M. C. (see WOODWARD, D. F.), 319
- DREA, C. M. (see KATZ, M. L.), 939
- DUMONDE, D. C. (see BANGA, J. P.), 199
- DUNCAN, G. (see BASSNETT, S.), 143
- DUVAL, G., GRUBB, B. R. and BENTLEY, P. J., Mercury accumulation in the eye following administration of methylmercury, 161
- EDELHAUSER, H. F. (see YEE, R. W.), 703
- EHRlich, D. (see SATTAYASAI, J.), 523
- EISENFELD, A. J., BUNT-MILAM, A. H. and SAARI, J. C., Uveoretinitis in rabbits following immunization with interphotoreceptor retinoid-binding protein, 425
- ELLIS, B. A. (see BANGA, J. P.), 199
- ELNER, S. G. (see YUE, B. Y. J. T.), 891
- ELNER, V. M. (see YUE, B. Y. J. T.), 891
- ERICKSON, P. A., FISHER, S. K., GUÉRIN, C. J., ANDERSON, D. H. and KASKA, D. D., Glial fibrillary acidic protein increase in Müller cells after retinal detachment, 37
- EVANS, J. A. and BATTELLE, B.-A., Histogenesis of dopamine-containing neurons in the retina, 407
- FALLON, T. J. (see PLEHWE, W. E.), 209
- FARNSWORTH, P. N. (see McEWAN, J. R.), 567
- FELDMANN, B. J. (see WOODWARD, D. F.), 319
- FERRIS, C. F. (see MARSHAK, D. W.), 839
- FISHER, S. K. (see ERICKSON, P. A.), 37
- FISHER, S. K. (see VAUGHAN, D. K.), 393
- FISHMAN, G. A. (see ANDERSON, R. E.), 155
- FRIEDMAN, Z., HACKETT, S. F. and CAMPOCHIARO, P. A., Characterization of adenylate cyclase in human retinal pigment epithelial cells in vitro, 471
- FU, S.-C. J. (see KEETING, P. E.), 261
- FUJIMOTO, D. (see KANAMAYA, T.), 165
- FUNG, B. K.-K. (see NAVON, S. E.), 115
- GEANON, J. D., TRIPATHI, B. J., TRIPATHI, R. C. and BARLOW, G. H., Tissue plasminogen activator in avascular tissues of the eye: a quantitative study of its activity in the cornea, lens, and aqueous and vitreous humors of dog, calf, and monkey, 55
- GENTLEMAN, S., REID, T. W. and MARTENSEN, T. M., Vanadate stimulation of phosphotyrosine protein levels in quiescent Nakano mouse lens cells, 587
- GOLDMAN, S. S. and WITKOVSKY, P., Evidence for gluconeogenesis in the amphibian retina, 65
- GONZALEZ-FERNANDEZ, (see LAVAIL, M. M.), 465
- GORRIN, G. M. (see LAVAIL, M. M.), 877

- GORTHY, W. C. and AZARI, P., Biochemical and histochemical evidence for lysosomal proteases in rodent lenses, 747
- GOURAS, P. (see ISHIZAKI, H.), 1
- GRIMES, P. A. (see KUWAYAMA, Y.), 907
- GRUBB, B. R. (see DUVAL, G.), 161
- GUÉRIN, C. J. (see ERICKSON, P. A.), 37
- GULIK-KRZYWICKI, T. (see DELAYE, M.), 601
- GUNNARSON, G., JAKOBSSON, A.-K., HAMBERGER, A. and SjöSTRAND, J., Free amino acids in the pre-retinal vitreous space. Effect of high potassium and nipecotic acid, 235
- HACKETT, S. F. (see FRIEDMAN, Z.), 471
- HAGEMAN, G. S. (see JOHNSON, L. V.), 553
- HALEY, J. E. (see ISHIZAKI, H.), 1
- HALL, M. O. (see COLLEY, N. J.), 377
- HAMANAKA, T. and BILL, A., Morphological and functional effects of Na_2EDTA on the outflow routes for aqueous humor in monkeys, 171
- HAMBERGER, A. (see GUNNARSON, G.), 235
- HARMON, G. (see YABLONSKI, M. E.), 49
- HAZLETT, L. D. and MOON, M. M., Ocular surface complex carbohydrates are modified with aging, 89
- HIGBEE, N. (see MUGGLETON-HARRIS, A. L.), 805
- HIGGINBOTHAM, E. J. and RICHARDSON, T. M., Effect of vitamin A on glycoconjugate: synthesis in the trabecular meshwork. A preliminary report, 697
- HIROKAWA, H. (see UENO, N.), 863
- HOE, S. T. and CRABBE, M. J. C., Kinetic effects of metal ion chelating reagents and their analogues on bovine lens aldehyde dehydrogenase, 663
- HOENDERS, H. J. (see BESSEMS, G. J. H.), 691, 817
- HOLLYFIELD, J. G. (see HUTCHINS, J. B.), 363
- HOLLYFIELD, J. G. (see LAVAIL, M. M.), 465
- HOLLYFIELD, J. G. (see VARNER, H. H.), 633
- HORIUCHI, K. (see KANAYAMA, T.), 165
- HSU, M.-Y., JASKOLL, T. F., UNAKAR, N. J. and BEKHOR, I., Survival of fiber cells and fiber-cell messenger RNA in lens of rats maintained on a 50% galactose, 577
- HU, T. S. (see LI, W.), 29
- HUTCHINS, J. B. and HOLLYFIELD, J. G., Cholinergic neurons in the human retina, 363
- IRONS, M. J., Cytochemical localization of Mn^{2+} -dependent pyrimidine 5'-nucleotidase activity in isolated rod outer segments, 789
- ISHIZAKI, H., HALEY, J. E., GOURAS, P., LIANG, J. T. and KJELDBYE, H. M., Isolation and characterization of plasma membrane proteins of cultured human retinal pigment epithelium, 1
- ITO, Y. (see LENTRICHIA, B. B.), 127
- IWATA, R. T. (see KAPLAN, M. W.), 623
- JAKOBSSON, A.-K. (see GUNNARSON, G.), 235
- JANSEN, H. G., SANYAL, S., DE GRIP, W. J. and SCHALKEN, J. J., Development and degeneration of retina in *rds* mutant mice: ultraimmunohistochemical localization of opsin, 347
- JASKOLL, T. F. (see HSU, M.-Y.), 577
- JERNIGAN, H. M., JR and ZIGLER, J. S., JR, Metabolism of glutamine and glutamate in monkey lens, 871
- JOHNSON, L. V. and HAGEMAN, G. S., Enzymatic characterization of peanut agglutinin-binding components in the retinal interphotoreceptor matrix, 553
- KANAYAMA, T., MIYANAGA, Y., HORIUCHI, K. and FUJIMOTO, D., Detection of the cross-linking amino acid, histidinoalanine, in human brown cataractous lens protein, 165
- KAPLAN, M. W., IWATA, R. T. and SEARS, R. C., Lengths of immunolabeled ciliary microtubules in frog photoreceptor outer segments, 623
- KASKA, D. D. (see ERICKSON, P. A.), 37
- KASP, E. (see BANGA, J. P.), 199
- KATZ, M. L., DREA, C. M. and ROBISON, W. G., JR, Age-related alterations in vitamin A metabolism, 939
- KAUFMAN, P. L., Adenosine 3',5'-cyclic-monophosphate and outflow facility in monkey eyes with intact and retrodisplaced ciliary muscle, 415
- KAUFMAN, P. L., Non-additivity of maxima pilocarpine and cytochalasin effects on outflow facility, 283

- KAUFMAN, P. L. (see KORETZ, J. F.), 307
- KEAN, E. L. (see LENTRICHIA, B. B.), 127
- KEETING, P. E., DONG, D., FU, S.-C. J. and LYSZ, T. W., Rat lens prostaglandin generation proceeds by the non-enzymatic degradation of PGH_2 endoperoxide, 261
- KJELDBYE, H. M. (see ISHIZAKI, H.), 1
- KOHNER, E. M. (see PLEHWE, W. E.), 209
- KORETZ, J. F., NEIDER, M. W., KAUFMAN, P. L., BERTASSO, A. M., DEROUSSEAU, C. J. and BITO, L. Z., Slit-lamp studies of the rhesus monkey eye. I. Survey of the anterior segment, 307
- KROP, B. (see DELAYE, M.), 601
- KUWAYAMA, Y., GRIMES, P. A., PONTE, B. and STONE, R. A., Autonomic neurons supplying the rat eye and the intraorbital distribution of vasoactive intestinal polypeptide (VIP)-like immunoreactivity, 907
- LAKE, N. and MALIK, N., Retinal morphology in rats treated with a taurine transport antagonist, 331
- LAVAIL, M. M. and GORRIN, G. M., Protection from light damage by ocular pigmentation: analysis using experimental chimeras, 877
- LAVAIL, M. M., PAPERMASTER, D. S., BRIDGES, C. D. B., RAPP, L. M., GONZALEZ-FERNANDEZ, F. and HOLLYFIELD, J. G., Absence of an inherited retinal degeneration in the WAG/Rij rat, 465
- LEE, P.-Y. (see SIEGEL, M. J.), 227
- LEE, R. H. (see NAVON, S. E.), 115
- LENTRICHIA, B. B., ITOH, Y., PLANTNER, J. J. and KEAN, E. L., The influence of carbohydrates on the binding of rod outer-segment (ROS) disc membranes and intact ROS by the cells of the retinal pigment epithelium of the embryonic chick, 127
- LEWIS, R. A. (see ANDERSON, R. E.), 155
- LI, W., HU, T. S., STRAMM, L. E., ROCKEY, J. H. and LIU, S. L., Synergistic activation of retinal capillary pericyte proliferation in culture by inositol triphosphate and diacylglycerol, 29
- LI, W. (see STRAMM, L. E.), 17
- LIANG, J. T. (see ISHIZAKI, H.), 1
- LIU, S. L. (see LI, W.), 29
- LOLLEY, R. N. (see NAVON, S. E.), 115
- LYSZ, T. W. (see KEETING, P. E.), 261
- McEWAN, J. R. and FARNSWORTH, P. N., Regional resistivity variations in lens homogenates, 567
- MCLAUGHLIN, B. J. and BOYKINS, L. G., Examination of sialic acid binding on dystrophic and normal retinal pigment epithelium, 439
- MCLAUGHLIN, B. J. (see CALDWELL, R. B.), 245
- MALIK, N. (see LAKE, N.), 331
- MARSHAK, D. W., CARRAWAY, R. E. and FERRIS, C. F., Characterization of immunoreactive substance P and neurotensin in the goldfish retina, 839
- MARTENSEN, T. M. (see GENTLEMAN, S.), 587
- MAUDE, M. B. (see ANDERSON, R. E.), 155
- MAURICE, D. (see ARAIE, M.), 73
- MIRANDA, O. C. (see BITO, L. Z.), 825
- MITTAG, T. W. (see SIEGEL, M. J.), 227
- MIYANAGA, Y. (see KANAYAMA, T.), 165
- MOON, M. M. (see HAZLETT, L. D.), 89
- MORI, M. (see SUZUKI, J.-I.), 755
- MUGGLETON-HARRIS, A. L. and HIGBEE, N., An in vivo and in vitro study of the embryonic and adult Lop mutant congenital cataractous lens, 805
- NAASH, M. I. (see PENN, J. S.), 779
- NAKAGAWA, T. (see SUZUKI, J.-I.), 755
- NAVON, S. E., LEE, R. H., LOLLEY, R. N. and FUNG, B. K.-K., Immunological determination of transducin content in retinas exhibiting inherited degeneration, 115
- NEAL, M. J. (see PLEHWE, W. E.), 209
- NEIDER, M. W. (see KORETZ, J. F.), 307
- NEWSOME, D. A. (see ANDERSON, R. E.), 155
- NOVACK, G. D. (see YABLONSKI, M. E.), 49
- ODOM, J. D. (see WILLIAMS, W. F.), 717
- OGAWA, K. (see SUZUKI, J.-I.), 755
- OLSEN, T. and SPERLING, S., The swelling pressure of the human corneal stroma as determined by a new method, 481

- OSBORNE, N. N. and TOBIN, A. B., Serotonin-accumulating cells in the iris-ciliary body and cornea of various species, 731
- OSTERFELD, A. M. (see VARNER, H. H.), 633
- PAPERMASTER, D. S. (see LAVAIL, M. M.), 465
- PATERSON, C. A. (see WILLIAMS, R. N.), 191
- PENN, J. S. and ANDERSON, R. E., Effect of light history on rod outer-segment membrane composition in the rat, 767
- PENN, J. S., NAASH, M. I. and ANDERSON, R. E., Effect of light history on retinal antioxidants and light damage susceptibility in the rat, 779
- PERRY, R. E., SWAMY, M. S. and ABRAHAM, E. C., Progressive changes in lens crystallin glycation and high-molecular-weight aggregate formation leading to cataract development in streptozotocin-diabetic rats, 269
- PLEHWE, W. E., CHAHAL, P. S., FALLON, T. J., CUNNINGHAM, J. R., NEAL, M. J. and KOHNER, E. M., Role of fluorescein glucuronide and its metabolism in vitreous fluorophotometry, 209
- PLANTNER, J. J. (see LENTRICHIA, B. B.), 127
- PODOS, S. M. (see SIEGEL, M. J.), 227
- POLITI, L. E., ADLER, R. and WHITTUM-HUDSON, J. A., Differential sensitivity of cultured retinal neurons and photoreceptors to herpes simplex infection, 923
- PONTE, B. (see KUWAYAMA, Y.), 907
- RAPP, L. M. (see LAVAIL, M. M.), 465
- RAYBORN, M. E. (see VARNER, H. H.), 633
- REDDY, T. S. (see SCOTT, B. L.), 101
- REID, T. W. (see GENTLEMAN, S.), 587
- RENNEN, H. J. J. M. (see BESSEMS, G. J. H.), 691
- RICCI, B., Effects of hyperbaric, normobaric and hypobaric oxygen supplementation on retinal vessels in newborn rats: a preliminary study, 459
- RICHARDSON, T. M. (see HIGGINBOTHAM, E. J.), 697
- ROBISON, W. G., JR (see KATZ, M. L.), 939
- ROCKEY, J. H. (see LI, W.), 29
- ROCKEY, J. H. (see STRAMM, L. E.), 17
- SAARI, J. C. (see EISENFELD, A. J.), 425
- SANDERS, M. D. (see BANGA, J. P.), 199
- SANYAL, S. (see JANSEN, H. G.), 347
- SATTAYASAI, J. and EHRLICH, D., Folic acid protects chick retinal neurons against the neurotoxic action of excitatory amino acids, 523
- SCHALKEN, J. J. (see JANSEN, H. G.), 347
- SCOTT, B. L., REDDY, T. S. and BAZAN, N. G., Docosahexaenoate metabolism and fatty-acid composition in developing retinas of normal and *rd* mutant mice, 101
- SEARS, R. C. (see KAPLAN, M. W.), 623
- SEBAG, J. (see UENO, N.), 863
- SEMPLE-ROWLAND, S. L. and DAWSON, W. W., Cyclic light intensity threshold for retina damage in albino rats raised under 6 lx, 643
- SHOUKREY, N. M. and TABBARA, K. F., An adenosine diphosphate phosphohydrolase in limbal vasculature, 149
- SIEGEL, M. J., LEE, P.-Y., PODOS, S. M. and MITTAG, T. W., Effect of topical pergolide on aqueous dynamics in normal and glaucomatous monkeys, 227
- SJÖSTRAND, J. (see GUNNARSON, G.), 235
- SLAPNICK, S. M. (see CALDWELL, R. B.), 245
- SPAETH, G. L. (see TRIPATHI, R. C.), 293
- SPEHLING, S. (see OLSEN, T.), 481
- STEEN, B. (see ÅKESSON, B.), 595
- STERN, M. E. (see YEE, R. W.), 703
- STONE, R. A. (see KUWAYAMA, Y.), 907
- STRAMM, L. E., LI, W., AGUIRRE, G. D. and ROCKEY, J. H., Glycosaminoglycan synthesis and secretion by bovine retinal capillary pericytes in culture, 17
- STRAMM, L. E. (see LI, W.), 29
- SULEYMAN, S. (see BANGA, J. P.), 199
- SUZUKI, J.-I., NAKAGAWA, T., OGAWA, K. and MORI, M., The effect of colchicine on the diurnal variation of phagocytosis in mouse retinal pigment epithelium, 755
- SWAMY, M. S. (see PERRY, R. E.), 269

- TABBARA, K. F. (see SHOUKREY, N. M.), 149
- TARDIEU, A. (see DELAYE, M.), 601
- TOBIN, A. B. (see OSBORNE, N. N.), 731
- TRIPATHI, B. J. (see GEANON, J. D.), 55
- TRIPATHI, B. J. (see TRIPATHI, R. C.), 293
- TRIPATHI, R. C., TRIPATHI, B. J. and SPAETH, G. L., Localization of sialic acid moieties in the endothelial lining of Schlemm's canal in normal and glaucomatous eyes, 293
- TRIPATHI, R. C. (see GEANON, J. D.), 55
- UENO, N., SEBAG, J., HIROKAWA, H. and CHAKRABARTI, B., Effects of visible-light irradiation on vitreous structure in the presence of a photosensitizer, 863
- UNAKAR, N. J. (see HSU, M.-Y.), 577
- VARNER, H. H., RAYBORN, M. E., OSTERFELD, A. M. and HOLLYFIELD, J. G., Localization of proteoglycan within the extracellular matrix sheath of cone photoreceptors, 633
- VAUGHAN, D. K. and FISHER, S. K., The distribution of F-actin in cells isolated from vertebrate retinas, 393
- WAKAKURA, M. and YAMAMOTO, N., Immunohistological localization of calmodulin in feline rod outer segments, 451
- WHEELER, T. G., Goldfish spectral sensitivity increase and shift with decreasing temperature, 617
- WHITTUM-HUDSON, J. A. (see POLITI, L. E.), 923
- WILLIAMS, E. H. (see DIRCKS, C.), 951
- WILLIAMS, R. N. and PATERSON, C. A., The influence of topical corticosteroid therapy upon polymorphonuclear leukocyte distribution, vascular integrity and ascorbate levels in endotoxin-induced inflammation of the rabbit eye, 191
- WILLIAMS, W. F. and ODOM, J. D., The utilization of ^{13}C and ^{31}P nuclear magnetic resonance spectroscopy in the study of the sorbitol pathway and aldose reductase inhibition in intact rabbit lenses, 717
- WITKOVSKY, P. (see GOLDMAN, S. S.), 65
- WOODWARD, D. F., DOWLING, M. C., FELDMANN, B. J. and CHEN, J., Topical timolol, at conventional, unilateral doses causes bilateral ocular β -blockade in rabbits, 319
- YABLONSKI, M. E., NOVACK, G. D., BURKE, P. J., COOK, D. J. and HARMON, G., The effect of levobunolol on aqueous humor dynamics, 49
- YAMAMOTO, N. (see WAKAKURA M.), 451
- YEE, R. W., EDELHAUSER, H. F. and STERN, M. E., Specular microscopy of vertebrate corneal endothelium: a comparative study, 703
- YUE, B. Y. J. T., ELNER, V. M., ELNER, S. G. and DAVIS, H. R., Lysosomal enzyme activities in cultured trabecular meshwork cells, 891
- ZIGLER, J. S., JR (see JERNIGAN, H. M., JR) 871

SUBJECT INDEX

- Accommodation, 307
- Acetylcholine, 363
- Acid phosphatase, 755
- Actin, 393, 451
- Adenosine diphosphate phosphohydrolase, 149
- Adenylate cyclase, 471
- β -Adrenergic blocking agents, 49
- β -Adrenergics, 471
- β -Adrenoceptors, 319
- Age, 89, 939
- Albino rat, 643
- Aldehyde, 663
- Aldose reductase, 717
- Aldose reductase inhibitors, 717
- Amacrine cells, 407, 839
- Amino acids, 235, 871
- Ammonia, 871
- Animal model, 307, 537
- Anterior chamber, 307
- Anterior chamber angle, 283
- Antioxidants, 779
- Aqueous humor, 171, 293
- Aqueous humor flow, 227
- Aqueous humor formation, 49
- Aqueous humor outflow, 283
- Aqueous-humor outflow facility, 415
- Ascorbic acid, 779
- Autonomic innervation, 907
- Autoradiography, 697
- Axonal transport, 537

- Basal infoldings, 245
- Blood-retinal barrier, 425
- Bovine, 17
- Brain, 839
- Brown nuclear cataract, 165
- Buphthalmia, 537

- Calcium, 601
- Calf lens, 601
- Calmodulin, 451
- Capsule, 677
- Carbohydrate recognition, 127
- Carbohydrates, 89
- ^{13}C NMR, 717
- Cat, 825
- Cataracts, 567, 595, 691, 805, 817
- Cataract, diabetic, 717
- Cataractogenesis, 269
- Cathepsin B, 747
- Cattanach's translocation, 877
- Cell birth-dating, 407
- Cell culture, 1
- Cell density, 703
- Cell migration, 55
- Cell proliferation, 29
- Chick retina, 923
- Chick, 523
- Chimera, 877
- Cholesterol, 767
- Choline acetyltransferase, 363
- Choline autoradiography, 363
- Chondroitin sulfate, 17
- Choroid blood flow, 459
- Ciliary body, 731
- Ciliary ganglion, 907
- Ciliary muscle, 283
- Ciliary-muscle disinsertion, 415
- Cilium, 623
- Colchicine, 755
- Colloidal iron, 293
- Color vision, 617
- Comparative anatomy, 703
- Cone matrix sheaths, 553
- Cone photoreceptors, 553, 633
- Congenital, 805
- Conjunctiva, 89
- Conjunctival hyperemia, 825
- Cornea, 89, 171, 481, 731
- Corneal endothelium, 703
- Corneal epithelium, 849
- Corneal permeability, 73, 217
- Corticosteroids, 191
- Cross-link, 691
- Cross-linking amino acids, 165
- Crystalline lens, 307, 567
- Culture, 29, 891
- Cyanide, 663
- Cyclic, 643
- Cyclic AMP, 415, 471
- Cyprinid, 617
- Cyprinidae, 839
- Cystine, 691
- Cytochalasin B, 283
- Cytochemistry, 89, 789
- Cytoskeleton, 393

- Degeneration, 331
- Degradation, 261
- Dermatan sulfate, 17
- Diabetes, 245, 269
- Diabetic cataract formation, 717
- Diabetic retinopathy, 951
- Diacylglycerol, 29, 101
- 4', 6-diamidino-2-phenylindole, 363
- Differentiation, 677
- Diffusion, 73
- Dipeptidyl peptidase II, 747
- Dipyridyl, 663
- Disc membranes, 127, 451
- Disk shedding, 623
- Diurnal variation, 755
- DNA synthesis, 677
- DNA virus, 923
- Docosahexaenoic acid, 101
- Dopamine, 407
- DPP II, 747
- Dystrophic retinal sialic acid, 439

- Electron microscopy, 293, 491
 Electrophysiology, 643
 Electroretinography, 491
 ELISA assay, 55
 EM morphology, 331
 Endothelium, 73
 Episcleral venous pressure, 49
 Epithelial cells, 677
 Epithelium, 73, 899
 Experimental autoimmune uveitis, 425
 Extracellular matrix, 55
 Eye, 191, 217, 907
- Fatty acids, 101
 Feline retina, 451
 Fiber cells, 577, 677
 Fibrin plate, 55
 Fibrinolysis, 55
 Filipin binding, 245
 Fluorescein, 73, 209
 Fluorescein glucuronide, 209
 Fluorescent assay, 747
 Fluorones, 73
 Folic acid, 523
 Free radicals, 691
 Freeze-fracture, 245
 Galactose diet, 577
 Galactosylation, 127
 GFAP, 37
 Glaucoma, 217, 227, 293, 537, 825
 Glial cells, 923
 Glial fibrillary acidic protein, 425
 Gluconeogenesis, 65
 Glutamate, 871
 Glutamate metabolism, 65
 Glutaminase, 871
 Glutamine, 871
 Glutathione enzymes, 779
 Glutathione peroxidase, 595
 Glycation, 269
 Glycoproteins, 1, 55, 293
 Glycosaminoglycans, 17, 687
 Guanidinoethyl sulfonate, 331
- Heparan sulfate, 17
 Hereditary glaucoma, 537
 Hereditary retinal degeneration, 491
 Herpes simplex virus Type 1 (HSV-1), 923
 High-pressure liquid chromatography, 839
 Histidinoalanine, 165
 Histochemistry, 747
 Histogenesis, 407
 [³H]thymidine, 677
 Human, 293, 481
 Human cells, 1
 Human lens, 817
 Human retina, 363
 Hyaluronic acid, 17
 Hydration, 481
 5-Hydroxytryptamine, 849
 Hyperbaric oxygen, 459
 Hyperglycemia, 951
 Hyperoxia, 459,
- [¹²⁵I]fibrin-coated wells, 55
 Immunocross-reactivity, 115
 Immunocytochemistry, 37, 363
 Immuno-electron microscopy, 37, 451
 Immunohistochemistry, 347
 Immunohistology, 451
 Inflammation, 191
 Inherited retinal degeneration, 115, 465
 Inositol, 29
 Inositol triphosphate, 29
 Insoluble lens protein, 691
 Interphotoreceptor matrix, 553, 633
 Interphotoreceptor retinoid-binding protein, 425
 Intraocular pressure, 227, 319, 825
 Iris, 731
 Iris function, 227
 Isoelectric point, 199
- Kainic acid, 523
 Ketanserin, 849
 Kinetics, 663
- Lactate, 143
 Lanthionine, 691
 Lectins, 439
 Lens, 143, 261, 577, 663, 717, 747, 817, 871, 899
 Lens cells, 587, 805
 Lens crystallins, 269
 Lens cytoplasm, 601
 Lens electrolytes, 567
 Lens resistivity, 567
 Lens shape, 307
 Lens thickness, 307
 Levobunolol, 49
 Light damage, 643, 877
 Light history, 767, 779
 Lipids, 101
 Lysosomal activities, 891
 Lysosomes, 755
- Macaca fascicularis*, 283, 415
 Macrophages, 425
 Macrovacuoles, 293
 Manganese, 789
 Mechanism of beta blockade, 49
 Melanin, 877
 Melanosome, 877
 Mercury, 161
 Messenger RNA, 577
 Metabolism, 871
 Methylene Blue, 863
 Microtubule, 623, 755
 Mitosis, 55
 Monkey, 293
 Monkey eye, 283, 415
 Mouse, 347, 755, 877
 Morphology, 643
 Morphometric analyses, 703
 Mucus, 89
 Müller cells, 37
 Mutant gene, 347
Myo-inositol phosphates, 849

- N proteins, 115
N-acetyl glucosamine, 439
 NAD⁺, 663
 Neuron, 393
 Neurones, 731
 Neuropeptides, 839
 Neurotoxins, 523
 Neurotransmitters, 235
 Nipecotic acid, 235
N-methyl-DL-aspartic acid, 523
 NMR spectroscopy, 567, 717
 Non-disulfide cross-links, 165
 Non-fibrinolytic activity, 55
 Non-tryptophan fluorescence, 817
 Norepinephrine, 849
 Norwegian elkhound dog, 491
 Nuclear magnetic resonance spectroscopy, 567, 717
 5'-Nucleotidase, 789

 Ocular hypertension, 49
 Ocular lens, 677
 Opsin, 347
 Optic-nerve head, 537
 Outer segments, 347, 623
 Outflow facility, 49, 227
 Outflow pathway, 293

 Partition coefficient, 73
 Peanut agglutinin, 553
 Pergolide, 227
 Pericanalicular tissue, 293
 PGA, 825
 PGB, 825
 PGD, 825
 PGE, 825
 PGF, 825
 PGF_{2α}, 217
 PGH₂ endoperoxide, 261
 pH, 143
 Phagocytic challenges, 891
 Phagocytosis, 377, 755
 Phagosome degradation, 755
 Pharmacokinetics, 217
 Phase separation, 567
 Phenanthroline, 663
 Phosphatidic acid, 849
 Phosphoinositides, 849
 Phospholipids, 101, 767
 Photodynamic reaction, 863
 Photoreceptor, 115, 347, 377, 393, 425, 623, 877
 Photoreceptor cells, 923
 Photoreceptor outer segment, 789
 Phototoxic effect, 877
 Pigmentation, 877
 Pilocarpine, 283
 Plasma membranes, 1
 Plasma and vitreous fluorescein and fluorescein glucuronide concentrations, 209
 Plasminogen activators, 55
 Polycationic ferritin, 293
 Polymorphonuclear leukocytes, 191
 Polyphosphoinositides, 849

³¹P NMR, 717
 PRA, 491
 Prazosin, 849
 Pre-retinal perfusion, 235
 Presbyopia, 307
 Pressure chamber, 459
 Pressure receptor, 293
 Primary open-angle glaucoma, 293
 Progressive retinal atrophy, 491
 Prostaglandin, 217, 471, 825
 Prostaglandin esters, 217
 Proteins, 1, 115
 Protein aggregation, 269
 Protein synthesis, 951
 Protein tyrosine kinase, 587
 Proteoglycan, 633
 Proteolysis, 377
 Pterygopalatine ganglion, 907

 Quinolinic acid, 523
 Quisqualic acid, 523

 Rabbit, 73, 191, 537, 825
 Rabbit cornea, 849
 Rabbit lens, 717
 Radioautography, 537
 Radioimmunoassay, 839
 Rat retina, 331, 789
 Rats, 245, 261, 269, 459, 577, 677, 767, 779, 907
rds, 347
 Receptor, 377
 Resistance to HSV-1, 923
 Resting refraction, 307
 Retina, 37, 65, 347, 363, 393, 407, 451, 459, 523, 553, 643, 789, 923, 939
 Retinal antioxidants, 779
 Retinal capillary, 29
 Retinal capillary pericytes, 17
 Retinal degeneration, 101, 115, 465, 491, 877
 Retinal detachment, 37
 Retinal development, 407
 Retinal pigment epithelium, 1, 127, 245, 331, 377, 425, 439, 471, 755, 877, 923, 939
 Retinitis pigmentosa, 491
 Retinoids, 697
 Retinol light-adaptation, 939
 Retinopathy of prematurity, 459
 Retinyl esters, 939
 Rhodamines, 73
 Rhodopsin, 127, 767
 Riboflavin, 863
 Rod outer segments, 127, 377, 451, 755, 767
 Rodents, 747
 RPE, 951
 RPE-membrane interaction, 127

 S-antigen, 199
 Scheimpflug photography, 307
 Schlemm's canal, 171, 283
 Selenium, 595, 677
 Serotonin, 731
 Sodium hyaluronate (NaHA), 863
 Na₂EDTA, 171

- Sorbitol pathway, 717
Specular microscopy, 703
Specular photography, 899
Streptozotocin diabetes, 245
Streptozotocin, 269
Stroma, 73, 481
Succinyl con A, 127
Surface proteins, 1
Swelling pressure, 481
- Tachykinins, 839
Taurine depletion, 331
Tear film, 89
Teleost fish, 839
Temperature, 617
Thickness, 481
Theshold, 643
Time lag, 73
Timolol, 319
Tissue culture, 17
Trabecular meshwork, 171, 283, 415, 697, 891
Transcellular channels, 293
Transducin, 115
- Translocation, 877
Triacylglycerols, 101
Two-dimensional gel electrophoresis, 1
Two-dimensional polyacrylamide-gel electrophoresis, 199
Tyrosine, 817
- Ultrastructure, 89
Uric acid, 817
Uveoscleral flow, 49
- Vanadate, 587
Vasoactive intestinal polypeptide, 907
Vertebrate anatomy, 703
Vitamin A, 697, 939
Vitamin E, 779
Vitreous biopsy, 209
Vitreous body, 235
Vitreous fluorophotometry, 209
Vitreous liquefaction, 863
- Western blotting, 199